Speed Post

Prasar Bharati
(Broadcasting Corporation of India)
Broadcasting House: All India Radio
New Delhi

No. DEL 1 (2)/BH/Console /2012-13-E 20.02.2013

Corrigendum

Reference to this office Limited Tender Enquiry letter of even no. dt.13.02.2013, regarding the purchase of Digital Recording Console, supplied specification may be treated as cancelled and a new fresh **Specification** is attached herewith. It is also mentioned that Bid security money may be read as Rs.40,000/- instead of Rs.20,000/-.

The other terms & conditions will be same.

To

M/s ----------

20.02.13
(Jitendra Sarswat)
AE
for DDG (E)

Copy to: AIR Website.

Prasar Bharati
(Broadcasting Corporation of India)
Broadcasting House: All India Radio,
New Delhi- 110001

TECHNICAL SPECIFICATION FOR DIGITAL RECODING CONSOLE:

1. GENERAL

1.1 This specification is for Digital Audio Recording Console for use in Production studios of All India Radio. The consoles shall be fully digital modular plug-in design and based on the field proven modern technology. It should be rugged in construction and suitable for reliable operation. 24 hrs. a day and 365 days in a year.

Only professional and branded products manufactured by reputed companies in sound broadcasting equipment field shall be offered.

1.2 The tenderer must submit the following documents along with the tender:

a) **A point-to-point compliance statement as per Annexure-I highlighting deviations, if any, on all the clauses of specification from the manufacturer of the offered equipment duly signed in original. Actual performance figures should be quoted under remarks column. If compliance statement is in format other that Annexure, the tender will be rejected out rightly.**

b) Detailed printed literature of the equipment giving complete electrical and mechanical data including detailed dimensions and mounting requirements.

c) The quote should either be from the original manufacturer or from their authorized representative/ dealer. In case, the quote is from the authorized representative / dealer, a certificate in original from the original manufacturer that the tenderer is authorized representative / dealer for India should be enclosed with the tender. In case, the quote is from both i.e. Authorized representative/ dealer and also from original manufacturer, the quotation from original manufacture will be considered for technical evaluation.

1.3 The tenderer may be required to demonstrate the functioning of the tendered unit during technical evaluation verification of electrical performance parameters as may be required during technical evaluation, in New Delhi. Non-compliance of equipment demonstration, if asked for by the indenter, shall disqualify the tender.

1.4 Incomplete offers will be rejected out rightly.

2. SCOPE OF THE TENDER

The specification is for supply of digital recording console (Including equipment rack for mounting of electronics part of the console. If such a design console is offered) along with all accessories, mating connectors and cables, etc. required to be fully functional.

20/2/13

3. TECHNICAL SPECIFICATIN

3.1 General Features:

3.1.1 The console should be simple in operation.

3.1.2 The Console should be compact ergonomically designed professional product and suitable for reliable operation on 24x7x365 basis working. It should be housed in rust-proof pre-painted metal cabinet. It may either be single composite unit or the main electronics portion may be in separate 19 inch rack mountable unit.

3.1.3 The console should be suitable for tabletop mounting.

3.1.4 The layout of modules / parts/ components in the console should be professional to permit easy access to the wiring, inspection, repairs/ servicing.

3.1.5 All the inputs and outputs should be available in 3-pin XLR or 'D' type connector for digital and on balanced 3-pin XLR for analog audio. The mating pins of 'D' connectors should be gold plated.

3.1.6 All switches/ buttons/ knobs operable by operator should be sturdy and designed for reliable operation for long hours. Inputs/ outputs and connectors shall not be on the working/ operating area of the console surface.

3.1.7 The controls for output bus assignment, channel on/off, monitoring level control, talkback and signaling etc. should be appropriately located on the control surface of the console.

3.1.8 Provision for ganging the mono inputs for stereo operation should also be available.

3.1.9 All selection points on the console surface shall be provided with clear illuminated status indication, if required in different colours for easy under standing.

3.1.10 Status indication in different colours, should be provided for signaling, talk-back from other consoles, on air, channel selection, PFL indication, stereo/ Mono and other operations.

3.1.11 Console should have facility to work with computer based studio/ news automation systems.

3.2 Input Fader channel Modules Features.

All the input fader channel modules should have following minimum provisions:-

3.2.1 Selection for feeding/ assigning any of the input to any of the output program bus.

3.2.2 The control fader of each input/ output module should fade in from infinity to zero to provide nominal output with minimum 10db reserve gain.

3.2.3 Console should have facility for Pre-Fade Listening (PFL), with suitable indicator during PFL.

3.2.4 All the internal Audio Signal Processing in the consoled should be fully digital signal processor based.

3.2.5 Various Control Circuits in the console should be digital and entire switching shall be through solid-state digital switches.

3.2.6 A to D and D to A converters shall have minimum 24 bit resolution.

20/4/13

3.2.7 There should be in-built world clock for synchronization of external digital devices and provision should also exist to synchronize the console from an external world clock or AES/EBU source.

3.2.8 All digital inputs and outputs will be in AES/EBU format and confirm to AES3-1992 signal format.

3.3 Input Configuration:

The consoles shall have minimum 12 faders. In case the frame size is not exactly matching the requirement of 12 input faders, higher frame size may be offered. The minimum requirement of input sources, faders and its configuration are as detailed below:

1. No. of Faders 12
2. Provision to connect input sources:
   - (i) Microphones
     - a) Mono 8
     - b) Stereo Refer to item no. 3.3.13
   - (ii) Line
     - a) Analogue mono line 8 (with further provision to configure as 4 stereo)
     - b) Digital 8
3. It should be possible to feed 4 Digital Stereo line inputs along with 8 mono mike inputs, with a facility to replace each mike input with a mono line input.

3.3.1 Mono Mike Inputs

All mike channels should have the following provisions.

3.3.1.1 Input Level range adjustable -60 dBu to -35 dBu (Ref. 0 dBU = 0.775V rms) with sensitivity control.

3.3.1.2 Input impedance ≥1 K ohms balanced.

3.3.1.3 Provision to gang two mike channels for feeding stereo (mike) input.

3.3.1.4 Phase reversal switch.

3.3.1.5 Built in switch-able Phantom supply of 48 volts.

3.3.1.6 Provision for muting of various monitoring speakers as detailed in section 3.12

3.3.1.7 Pan potentiometer.

3.3.1.8 Selectable inbuilt parametric equalizer with high Q capable of providing a least ±12dB equalization independent in each of three bands, i.e. at low, mid and high audio frequencies.

3.3.2 Mono Line inputs (Analogue)

All mono analogue channels shall have the following features and parameters.

3.3.2.1 Nominal level + 4 dBu with headroom of at least 15 dB

3.3.2.2 Maximum input level + 24dBu

3.3.2.3 Input impedance ≥ 10K ohms balanced.

3.3.2.4 Balance control in each channel

3.3.3 Digital inputs

All Digital input channels shall have the following features/ parameters:

3.3.3.1 Level reference: 0 dB digital = + 24 dBu analogue

20/2/13

(+ 4 dBu = - 20 dB FSD)

3.3.3.2 Signal format — AES-3 of 1992

3.3.3.3 Level: input level — Digital input level should match the analogue (as mentioned in para 3.3.2)

3.3.3.4 Internal sampling rates: — 32kHz, 44.1 kHz and 48 kHz

3.3.3.5 Convertor : — A/D 24-bit, SRC on all digital input
In build sampling rate converter on each digital input channel to accept different Sampling rates.

3.4 Output Configuration:

The console should provide at least 4 independent stereo programme outputs, each in analogue as well as in digital format.

3.4.1 Analogue Output

a)	Nominal output level	+4dBu, adjustable
b)	Max. output level	+ 24 dBu
c)	Output (Source) impedance	≤60 ohms balanced
d)	Output load impedance	600 ohm

3.4.2 Digital output

a)	Level reference	0 dB digital = + 24 dBu analogue
b)	Output level	Digital output level should match the analogue output level as mentioned in para 3.4.1
c)	Output impedance	110 ohms
d)	Conversion	24 bit

3.5 Frequency Response over the entire frequency range of 20 Hz to 20 kHz and at nominal input and nominal output levels.

a)	Mike inputs to program outputs	within ± 0.5 dB
b)	Analogue / digital line inputs to program outputs	within ±0.3 dB

3.6 Total Harmonic Distortion + Noise

a)	Mike pre input to analog output	<0.01%, -35 dBu analog input + 24 dBu analog output, Filter BW 20 kHz
b)	Analog input to analog output	< 0.01%, + 24 dBu input, + 24 dBu output, Filter BW 20 kHz
c)	Digital input to digital output	< 0.01%, 20 Hz to 20 kHz, Filter BW 20 kHz + 0dB, input, + 0dB, Output, filer BW 22 KHz
d)	Digital input to analogue output	< 0.01%, 20 Hz to 20 kHz, Filter BW 20 kHz -1dB input, + 23 dB output, Filter BW 22KHz

20/2/13

3.7 Equivalent Input Noise Level and Signal to Noise ratio.

a) Equivalent input noise for mike channel shall be better than – 125 dBu (for Microphone channels, with nominal input level of –60 dBu and nominal output of +4dBu (rest of the input faders in off position) and measurement band limited to 20 Hz to 20KHz).

b) Signal to Noise Ratio for Line channel ≥80 dB (with nominal input level of + 4 dBu in line channel and + 4dBu output level and rest of the input faders in off position with measurement band limited to 20 Hz -20 kHz)

3.8 Stereo Separation:

Channel separation (Between L&R of same channel), better than 60dB, with maximum input and output at frequency band of 20 Hz to 20 kHz.

3.9 Inter channel cross Talk:

Better than 90 dB, with maximum input and output and measurement band limited to 20 Hz – 20kHz,

3.10 Monitoring Facilities:

3.10.1 Announcer/ Recording booth monitor:

Monitoring signal of 0dBu nominal level should be available for monitoring on external speakers for any one of the programme outputs selected. Headphone monitoring facilities should also be available. Both the monitoring facilities shall have build-in level controls of 10dB. It should be possible to select any of the two external stereo sources on the monitor.

3.10.2 Studio Monitor

Similar monitoring facilities, as under para 3.10.1, should be provided for artists in studio for any one of the programme outputs selected.

3.10.3 PFL Monitor

Facility to monitor all input channels in a built–in PFL speaker as well as on headphone should be provided. PFL speaker as well as headphone should have in-built level control of 10dB.

3.11 Talk-Back

Talkback facility with another console, installed in control room, other studios and dubbing room shall be available. The talk back mike should be preferably in-built.

3.12 Mute Controls

PFL, Talkback and Announcer monitor speakers in Announcer Booth of the studio shall get muted when any mike channel is faded in. Similarly, studio, monitor for artists shall be muted when any artist – mike is faded in.

20/2/13

3.13 Signaling & Warning Lights

a) Provision for a 'red-light' (On-Air) indication on the console surface (by receiving 0 logic controlled from the console in control room) shall be provided.

b) Provision for generating at least two warning light signals (0 logic) controlled from each mike fader.

c) Provision should also exist for generating 'green light for sending ready signal in control room by extending '0' logic.

3.14 Metering

Two numbers of LCD/LED indicators to provide the VU as well as PPM (selectable) should be available to monitor the level on any of the output buses.

3.15 Power Supply

3.15.1 The console shall work on 230V ±10%, 50Hz ±6% single-phase AC supply.

3.15.2 The power supply unit of the console should be protected against overload, short circuit and over-voltage.

3.15.3 Power supply unit / module should either be external (19 inch rack mountable) or in case of internal, temperature of console front surface should be comfortable when power is ON.

3.16 Climatic Conditions.

The console will generally be installed in air-conditioned environment. However, the console should perform satisfactorily in the dry temperature range of 5°C to 40°C and humid conditions prevailing in tropical climate. A test certificate in this regard should be produced from an approved Test House.

3.17 Accessories.

Each console shall be supplied with following accessories/ Items and their cost shall be included in quotation.

3.17.1 19 Inch mounting rack should be provided if the electronics of the console is separate from the table top of the console.

3.17.2 A complete set of mating connector (with gold plated contacts) and power chord etc.

3.17.3 A set of operation manual and service manual.

3.17.4 Any other item, including interconnecting cables and related configuration software (Pre-loaded and on Media CD/DVD) for console etc. required for making the console fully, operational.

4. GUARANTEE/ WARRANTY

4.1 The equipment shall be guaranteed for trouble free operation for a minimum period of one year from the date of supply. Replacement/ servicing shall be effected free of cost for hardware and software during the guarantee period.

20/2/13

4.2 The contractor/ seller hereby guarantee that the said goods/ stores/ articles would continue to conform to the description and quality aforesaid for a period of 36 months from the date of installation and commissioning at the consignee's site, if during the aforesaid period of 36 months the said goods/ stores/ articles be discovered not to conform to the description and quality aforesaid, the purchaser shall be entitled to call upon the contractor/ seller to rectify goods/ stores/ articles or such portion thereof as is found to be defective by the purchaser with a reasonable period or such specified period as may be allowed by the purchaser in his discretion on application made thereof by the contractor / seller and in such an event the above mentioned warranty period shall apply to the goods/ stores/ articles rectified from the date of rectification warranty period shall apply to the contractor / seller pay to the purchaser such compensation as may arise by reasons of the breach of the warranty herein contained.

4.3 Guarantee that firm will supply spare parts, if and when required on the agreed price. The agreed basis could be including but without any limitation on agreed discount on the published catalogue or an agreed percentage of profit on the landed cost.

4.4 Warranty to the effect that before going out of production for the spare parts they will give adequate advance notice to the purchaser of the equipment so that latter may undertake the balance of the life time requirements.

4.5 Warranty to the effect that firm will make available the blue prints of the drawings of the spares, if and when required in connection with the main equipment.

5. SPARES

The essential recommended spares should be quoted separately. The list should include name and part no. with quantity and its unit cost. The tenderer shall ensure availability of spares in India for the quoted equipment for a period of at least 5 year from the date of supply of the equipment. The cost for software upgrade, if any, shall also be quoted as an option.

6. ELECTROMAGNETIC COMPATIBILITY

The console shall conform to the electromagnetic standards that are listed in the guidelines 89/ 336/ EC & FCC Part 15. The certificate from independent test laboratory regarding compliance to the aforesaid standard should be attached with the technical bid.

7. TRAINING

The tenderer shall be required to train at least 2 AIR persons on operation, maintenance and repair of the equipment.

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20/2/13